IN THE SPECIFICATION

Please make the following changes to the referenced Specification paragraphs:

[3] CTI systems include an air tank that is mounted on the vehicle. Air is supplied from the tank to the tires by using various methods. CTI systems can be incorporated into drive or non-drive axles. Traditionally, for either type of axle, CTI systems include an air connection that allows air to be supplied from a non-rotating air source to ~~the~~ rotating tires. Some systems include an air connection that is mounted for rotation with a wheel hub assembly at one end, and which is mounted at an opposite end to a non-rotating axle tube for a non-drive axle. In these systems, air is supplied from the tank to an ~~the~~ interior of the axle tube. Air from inside the axle passes through the ~~rotating~~ air connection and is conducted to the rotating tires.

[4] Traditionally, CTI systems for drive axles have been more difficult to incorporate into conventional wheel ends. Typically, these CTI systems use drilled passageways in ~~the~~ rotating wheel hubs in combination with drilled passageways in ~~the~~ non-rotating spindles. This configuration requires large, expensive seals, is difficult to assemble, and is expensive to machine. Further, wheel hubs for drive axles using disc brakes and single tires often do not have enough packaging space to accommodate drilled passageways. Thus, using a CTI system for such a configuration is not practical.

[11] In one disclosed embodiment, the subject invention is incorporated into an inverted portal drive axle. The inverted portal drive axle includes an input driven by a vehicle power source and defining a longitudinal axis. The input is operably coupled to a differential, which is in driving

engagement with first and second axle shafts. In an inverted portal axle configuration, the input is positioned laterally closer to one wheel assembly than the other wheel assembly, thus, one of the first or second axle shafts is significantly longer than the other axle shaft. Each axle shaft drives a gear set that raises the driving input from a ~~the~~ lower axle shaft level up to a higher wheel axis level. The gear sets drive the wheel shafts, which in turn drive the wheel hubs. In this axle configuration, the bore is coaxial with the wheel axis of rotation, which is parallel to and spaced apart from an axle shaft axis of rotation. The fluid inlets at the inboard ends of the wheel shafts are easily accessed through a ~~the~~ non-rotating gearbox or axle housing. Thus, the air supply component can be easily installed to communicate with the wheel shaft bore without interfering with other wheel components and without requiring significant wheel modifications. A connector and hose assembly are operably coupled to each fluid outlet at the outboard end of the wheel shafts to conduct the air to the tire assemblies.

[14] Figure 1 is a schematic view of a drive axle assembly with a CTIS incorporating the subject invention.

[24] The CTI system 10 also includes a plurality of pressure valves and sensors that are used to monitor tire pressure, air supply pressure, and to control air flow throughout the CTI system 10. In one example shown in Figure 1, the CTI system 10 includes a pressure regulator and unloader valve assembly 16. The pressure regulator is typically set at a desired tire pressure level. The unloader valve is set at a lower pressure and prevents air from being supplied to a tire if there is a tire blowout. The unloader valve is normally open, however, if pressure output from

the pressure regulator falls below a certain pressure level, the valve closes to prevent depletion of the air supply in a tire blowout situation. Check valves 18 can be used in addition to the pressure regulator unloader valve assembly 16 to permit only one-way flow in the system. The CTI system 10 can also include hose pressure lines 20 that interconnect the air supply 14, pressure regulator and unloader valve assembly 16, and check valves 18 to the axle assembly 12. Optionally, or in addition to the components discussed above, pressure sensors 22 can be used at each tire assembly 24 to individually monitor tire pressure. It should be understood that these are just examples of certain types of valves, regulators, and sensors that could be used in the CTI system 10. Other CTI components known in the art could also be used in place of, or in addition to, the components discussed above.

[25] The inverted portal drive axle assembly 12 includes an input 26 that is operably coupled to a driving power source 28, such as an engine or electric motor. In one disclosed embodiment, the input 26 includes a pinion gear 30, which is driven by a driveshaft 32 coupled to the power source 28. The pinion gear 30 drives a ring gear 34, which is operably coupled to a differential gear assembly 36. First 38 and second 40 axle shafts are coupled to the differential gear assembly 36, which provides for axle shaft speed differentiation as the vehicle executes turning maneuvers. The first 38 and second 40 axle shafts drive first 42 and second 44 wheel gear assemblies, which in turn drive first 46 and second 48 wheel end assemblies.

[28] A perspective view of the inverted portal drive axle assembly 12 is shown in Figure 2. Each wheel end assembly 46, 48 defines a wheel axis of rotation 60 that is vertically higher

relative to ground level than the axle shaft axis of rotation 54. Thus, the driving input power or torque is transferred from the input 26, at a vertically lower position, up to drive the wheel end assembly 46, 48, at a vertically higher position. This transfer is achieved by the use of the first 42 and second 44 wheel gear assemblies.

[30] Each of the axle shafts 38, 40 drives one of the first 42 or second 44 wheel gear assemblies. The first 42 and second 44 wheel gear assemblies are preferably helical gear assemblies that each include a helical pinion gear or wheel input drive gear 74 driven by one of the axle shafts 38, 40, see Figure 4. The input drive ~~pinion~~ gear 74 is in meshing engagement with a pair of helical idler gears 76, which in turn are in meshing engagement with a helical driven gear or wheel output driven gear 78. The gears 74, 76, and 78 are enclosed within a gear housing 80 that is supported by the axle housing 58. It should be understood that the helical gear assembly shown in Figure 4 is just one example of a wheel gear assembly, and that other wheel gear assemblies known in the art could also be used.

[31] The output driven gears 78 drive the wheel shafts 82 that are coupled to the wheel hubs 50. The wheel shafts 82 define the wheel axes of rotation 60~~58~~. The wheel gear assemblies 42, 44 raise the driving input from the vertically lower first 38 and second 40 axle shafts ~~38, 40~~ to the vertically higher wheel shafts 82. The wheel axes ~~axles~~ of rotation 60 ~~58~~ are parallel to and spaced apart from the axle shaft axes of rotation 54, and are transverse to the longitudinal axis of rotation 52. Thus, the input drive gears 74 are coaxial with the axle shaft axes of rotation 54, and the output driven gears 78 are coaxial with the wheel axes of rotation 60~~58~~.

[32] As shown in Figures 5A and 5B, the wheel shafts 82 each include a cylindrical shaft body 84 that has a first end face 86 and a second end face 88. A laterally extending bore 90 forms a fluid passage within the shaft body 84 that is in fluid communication with the air supply 14. The bore 90 is preferably coaxial with the wheel axis of rotation 60 ~~58~~ and extends through the entire length of the wheel shaft 82. The bore 90 has a fluid inlet 92 formed at the first end face 86, which is in fluid communication with the air supply 14. The bore 90 has a fluid outlet 94 formed at the second end face 88, which is in communication with the tire assembly 24. The fluid inlet 92 and the fluid outlet 94 are both coaxial with the bore 90.

[33] The second end face 88 includes a radially extending flange portion 96 that is mounted to an end face of the wheel hub 50 with a plurality of fasteners 98. The wheel hub 50 is rotatably supported by a pair of wheel bearings 100 for rotation relative to a non-rotating spindle ~~tube~~ 102, which is supported by the gear housing 80.

[34] A tee connection and hose assembly 104 is mounted to the second end face 88 of the wheel shaft 82. The tee connection and hose assembly 104 transfers air from the bore 90 to the tire assembly 24~~90~~. In one disclosed embodiment, the tee connection and hose assembly 104 includes a threaded body portion 106 that is received within a threaded portion 108 of the wheel shaft 82. While a threaded attachment is preferred, any other connection and hose assembly known in the art and any known attachment method could be used to form the air connection from the second end face 88 to the tire assembly 24.

[36] When tire pressure falls below a predetermined level, air is supplied from the air supply 14, through the needle portion 124, and into the bore 90. The air then flows from the bore 90, through the tee connection and hose assembly 104, and into the tire assembly 24.

[40] An air supply needle 146, similar to that described above, is mounted to the axle housing 58. The air supply needle 146 includes a threaded base portion 148 that is attached to the axle housing 58 and a hollow needle portion 150 that extends from the base portion 148. The needle portion 150 extends through the central bore 142 and into bore 90. The needle portion 150 pierces or is inserted through a small opening formed within the gland seal 132 such that the gland seal 132 resiliently engages the needle portion 150 to provide a sealed rotary connection. Air flows from the air supply 14, through the hose pressure lines ~~connections~~ 20, through the needle portion 150, and into the bore 90.

[42] An air supply needle 174, similar to that described above, is mounted to the axle housing 58. The air supply needle 174 includes a threaded base portion 176 that is attached to the axle housing 58 and a hollow needle portion 178 that extends from the base portion 176. The needle portion 178 extends through the internal bore 170 and into bore 90. The needle portion 178 resiliently engages seals 172 to provide a sealed rotary connection. Air flows from the air supply 14, through the hose pressure lines ~~connections~~ 20, through the needle portion 178, and into the bore 90.

[44] While Figures 5-8 show various examples of air supply component assemblies, it should be understood that other air supply component assemblies could also be used to provide a sealed rotary connection between the non-rotating axle housing 58 and the rotating wheel shaft 82. By forming a single bore ~~passage~~ 90 extending through the center of the wheel shaft 82, a simple method of providing a CTI~~S~~ system 10 for an inverted portal drive axle ~~12~~ is achieved. The interface between the bore ~~passage~~ 90 and the air supply 14 can be simply and easily installed in this configuration. Further, the relatively short wheel shaft 82 is used to provide a single, easily sealed bore ~~passage~~ 90 for conventional spindle configurations or unitized wheel bearing configurations. The system 10 is simple to maintain, requiring no removal of the wheel hub 50 to repair or replace any CTI component. Compared to traditional CTI systems, the subject invention utilizes components that are small, simple, and inexpensive.